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To: W. P. Gammill, Chief, Health Physics
Branch
From: C. A. Hawley, Chief, Environmental
Section
Subject:

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February 25, 1965

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CERT Laboratories Studies Outline on the variables to be considered in the test

6. Name and telephone number of person completing form: Anjan K. Majumder (208) 525-0206	7. Organization: Lockheed Idaho Technologies Co.	8. Date: May, 1995
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HUMAN RADIATION EXPERIMENTS

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REPOSITORY NAME	INEL
COLLECTION NAME	RADIOLOGICAL AND ENVIRONMENTAL SCIENCES LABORATORY, FILES OF DOUG CARLSON, DIRECTOR
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DOCUMENT TITLE: LETTER TO W. P. GAMMILL, FROM C. A. HAWLEY,
SUBJECT: CERT LABORATORY STUDIES OUTLINE,
DATED FEBRUARY 25, 1965

CROSS REFERENCES:

ITEMS OF INTEREST:

W. P. Gammill, Chief
Health Physics Branch

February 25, 1965

C. A. Hawley, Chief
Environmental Section

CERT LABORATORY STUDIES OUTLINE

HSHP:CAH

The major purpose of the CERT laboratory studies is to define some of the variables involved in the deposition of radionuclides from the air onto vegetation, and to determine which of these variables will have the greatest influence in determining the rates or amounts of such deposition.

The variables to be considered in the studies are:

- (1) wind speed (gross), (2) temperature, (3) humidity, (4) stomatal condition, (5) atmospheric particle sizes, (6) gross chemical form of iodine, (7) grass types (leaf surface), (8) grass age, (9) and available soil water.

The first phases of the studies will include establishing reference data for three main types of iodine state: (1) elemental I_2 , called Run #1, (2) elemental I_2 , associated with atmospheric dusts, called Run #2, and (3) organic iodides associated with atmospheric dusts, called Run #3.

Table I reflects my estimates of what must be done to establish the reference data.

REPOSITORY INEL
Radiological + Environmental Sciences
COLLECTION Laboratory, Files of Doug Carlson, Director
BOX No. RESL C7A 690, Room #103
Ltr to W. P. Gammill from C. A. Hawley
SUBS CERT Laboratory Studies Outline
FOLDER
2/25/65

TABLE I

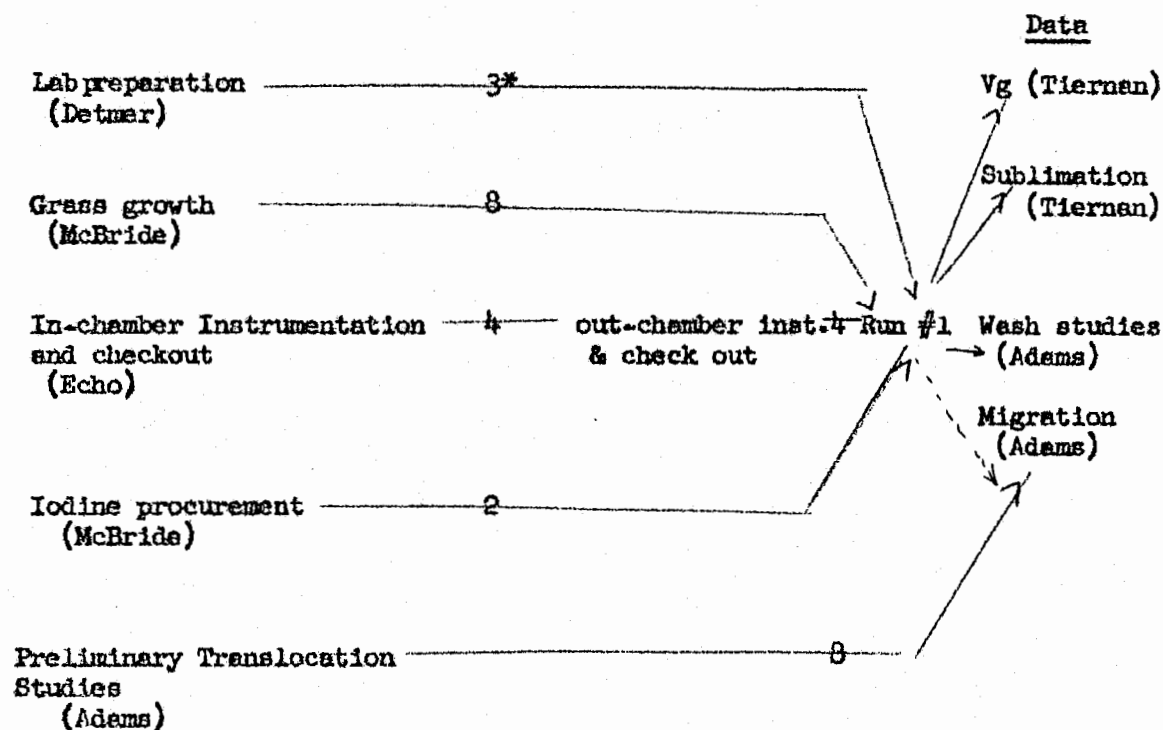
<u>Laboratory Preparation</u>	<u>Iodine procurement & Grass Growth</u>	<u>Run #1</u>	<u>Run #2</u>	<u>Run #3</u>
1. Install light bank & cooler in Room 147	1. 30 flats have been planted	1. Use elemental I_2	1. Use elemental I_2 atmospheric	1. Use organic atmospheric
2. establish table and tray for chamber	2. 15 more planted by April 1	2. $u = 7-10m/sec$	dust combination	dust combination
3. Instrument and checkout chamber	3. Types and quantities planted two months ahead of use time	3. ambient temp & humidity	2 through 7	2-7 same as Run #1
4. Do preliminary translocation studies. (this will be done separately from chamber use and will be needed to determine if translocation studies should be made part of Runs #1, 2, & 3)	4. procure I-131	4. determine $\checkmark g$	Same as Run #1	Run #1
		5. determine sublimation rates		
		6. wash-off studies		
		7. leaf & root transmigration		

*2 m/sec.
1 m/sec.*

February 25, 1965

The conditions for subsequent runs will be determined from data gained from the first three, and will be designed to examine the above-listed variables. Table II is a flow chart showing the time sequences and personnel involved.

TABLE II



* Numbers indicate number of weeks needed

----- Dash line indicate that studies may not be conducted;
depends on preliminary studies

Starting on March 1, and considering summer work load, the estimated time schedule for the three basic reference runs is:

Start (March 1)

Run #1 (May 1)

Run #2 (August 15)

Run #3 (October 30)